BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D.C. 20268–0001

| POSTAL RATE AND FEE CHANGES, 2000 | Docket No. R2000–1 |
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# RESPONSE OF THE UNITED STATES POSTAL SERVICE TO PRESIDING OFFICER'S INFORMATION REQUEST NO. 12, ITEM 1
(May 25, 2000)

The United States Postal Service hereby provides its response to Presiding Officer's Information Request No. 12, Item 1, filed on May 15, 2000. Each question is stated verbatim and is followed by the response.

The responses to Items 2-5 are being filed separately to facilitate copying.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorneys:

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RESPONSE OF POSTAL SERVICE WITNESS MAYES TO PRESIDING OFFICER'S INFORMATION REQUEST NO. 12, QUESTION 1

1. Please refer to the response to question 5 of Presiding Officer's Information Request No. 1. The question concerns, among other things, the role that RPW correction factors should play in rate design. These factors significantly affect some subclasses, but not others such as Periodicals. Whether significant or not, it seems important that they be handled appropriately and uniformly among witnesses.

   The response agrees that the revenue requirement should be divided by the correction factor at the beginning of the rate design process but then indicates (in part "f") that a correction factor need not be used to estimate the revenue that finally results. To clarify the record, please discuss the logic of the following development, which is adapted to the Postal Service's procedure of developing rates on a TYBR basis.

   Suppose for a subclass that the billing determinants multiplied by the rates in the base year yield a "calculated" revenue of $800 (without fees) and that the official RPW revenue, for some unknown reason, is $960 (without fees). This produces a correction factor of 1.2 (960/800). The mechanics are that whatever revenue is calculated, the actual revenue tends to turn out to be 1.2 times that amount. Now suppose the TYBR cost is $600 and that an after-fees coverage of 150% is desired. The revenue requirement, then, is $900 (1.5 x 600). If the billing determinants were to be used to design rates that yield $900, which (except for rounding) would then be the calculated revenue, the actual RPW revenue would be expected to turn out to be $1080 (1.2 x $900). Since this would be excessive, an adjusted procedure is used.

   Assume the TYAR fees are estimated to be $15, at before rates volumes. Since the fees may not be known at this point, a rough estimate or first-iteration value may be used. The figure of $885 ($900 - $15) is divided by 1.2 to yield $737.50. The rates are designed according to the billing determinants to yield $737.50, knowing that the RPW realized revenue will tend to be 1.2 times this much. At the end of the rate design process, the calculated revenue, which will be $737.50 (except for rounding effects) is multiplied by 1.2 to get an estimate of the realized revenue of $885. To this, the TYAR fees of $15 are added. The sum, $900, divided by the cost of $600 yields the desired coverage of 150%. If the volume decreases 1% under the new rates, the revenue estimates will decrease by 1%, the costs (to the extent they are volume variable) will decrease 1%, and the fee estimate will decrease 1%. The coverage will be approximately the same.

   Please explain whether this process properly represents a logical rate design procedure and whether the rate design procedures used by the Postal Service in this proceeding are consistent with it. If another rate design procedure has been used, please outline it in detail and explain whether it has been used consistently.

**Response:**

The process described in this question somewhat resembles the rate design process used by postal witnesses, a process described in greater detail below. The question asks that this response "explain whether this process properly represents a logical rate design procedure and whether the rate design procedures used by the Postal Service in this proceeding are consistent with it."

## Rate Design Processes Cannot Be Identical Across Subclasses

### Reason 1: Differences in cost behavior

For several reasons, the rate design process that I will describe below will not be consistent across all rate design witnesses. One reason that the treatment will vary by rate witness and subclass is because cost behavior is not identical for each subclass. The costs will not adjust identically with volume as in the example in the question above, where a 1% decrease in volume is associated with a 1% decrease in costs, for example for subclasses with substantial mail mix changes within the subclass.[1]

For this reason, the rate design process is not as simplistic as the one described in the question. The "revenue requirement" for any given subclass is not calculated by simply multiplying the TYBR costs by the desired TYAR cost

[1] It is my understanding that in the rollforward model, some cost reduction programs and other programs, final adjustments and PESSA costs will be distributed on different keys because of the mail volume effect from TYBR to TYAR, thus changing reported unit costs.

coverage.[2] The TYAR revenue requirement must be established with reference to TYAR volumes and costs, not with respect to TYBR volumes and costs.

In circumstances in which the TYAR unit cost is expected to be higher, or is demonstrated through the iterative process to be higher than the TYBR unit cost, it is necessary for the rate design witness to use, in conjunction with the TYBR costs, a "markup factor" or a "target cost coverage" as an input to the rate design workpapers that is higher than the final cost coverage desired. [3] Witness Robinson's response to interrogatory UPS/USPS-T34-14 provides a concise description of the use of the markup factor, or what she calls "target cost coverage", as an input to her rate design to ensure that the TYAR cost coverage matches the cost coverage required. Rate witnesses design their rates using the TYBR costs, but through the iterative process, they learn the degree to which the TYAR costs diverge from the TYBR costs and adjust, if necessary, their markup factors and other elements in their rate design workpapers in order to achieve their TYAR cost coverage targets.

It is worth noting that, as a result of insufficient technical language for postal ratemaking, there may be some confusion regarding the use of the term "target cost coverage." The rate level witness gives to the rate design witnesses a set of cost coverages which it is hoped will result after completion of the rate design

[2] For purposes of this response, a cost coverage is considered to be the ratio of revenue to volume-variable cost.

[3] There is an analogous concept in target shooting: "windage." If the wind is blowing from west to east, one does not aim at the center of the target, but rather, somewhat to the west, depending on

process. These cost coverages are also sometimes referred to as "target cost coverages." In order to achieve these targets, the rate design witnesses may have to use different cost coverages as inputs to their rate design workpapers. As I have discussed above, the cost coverages used in the rate design workpapers are sometimes referred to as "markup factors" or "target cost coverages," as well. The important thing to understand is that the rate design witnesses may use different cost coverages – whether called "markup factors" or "target cost coverages" or "preliminary cost coverages" or some other term – in order to design rates which will, in the after-rates forecasts of volume, cost and revenue, result in the set of cost coverages requested by the rate level witness. Any difference that is observed between the resulting TYAR cost coverage and the cost coverage used in a set of rate design workpapers should not be construed to indicate significant departure of the resulting TYAR cost coverage from the rate level witness's cost coverage target. Nor should a difference between the two cost coverages be construed to suggest that the rate design witness failed to achieve the TYAR cost coverage target. The cost coverage used in the rate design workpapers would have been purposely set at a level different from the desired TYAR cost coverage precisely with the intent of achieving the desired TYAR cost coverage.

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how hard the wind is blowing. The amount by which the aim is shifted to the west is the "windage." Some subclasses need more "windage" than others.

**Reason 2: Differences in forecast detail**

A second reason that the process differs across subclasses is that the volume forecasts provide different levels of detail for different subclasses. For some subclasses (e.g., the Periodicals subclasses), the volume forecast provides only the total subclass volume, in which case the rate design process does not have to anticipate or react to changes in the distribution of volume across rate categories in response to proposed rates. The forecasted volume is simply distributed across the rate elements using the billing determinants; there is no change in mail mix. However, for other subclasses (e.g., First-Class Mail letters, Parcel Post and Standard A Regular), the volume forecast provides detail below the subclass level, and the percentage distribution of volume across rate categories – the mail mix -- will differ from before- to after-rates. The iterative rate design process for these subclasses is thus somewhat more complicated.

**Reason 3: Differences in rate structure and size**

Yet another reason that the subclasses differ in their rate design approaches is that there are often fundamental differences in rate structure and revenue size among subclasses. This point may be illustrated clearly by considering First-Class Mail. The First-Class Mail rate structure consists of relatively few rate elements (approximately 20), several of which, in isolation, have a large impact on postal revenues, and several of which are quite visible to the general public. For example, in base year 1998, single-piece mail in the letters subclass generated close to $22 billion in revenue with three rate elements (first-ounce rate, additional-ounce rate, and the nonstandard surcharge). In designing

proposed rates in this docket, witness Fronk's First-Class rates were guided by the factors described in detail in his testimony (USPS-T-33), once provided with subclass cost coverage and percentage rate increase targets. These factors include the convention of proposing the first-ounce stamp price in whole cents, the rate relationship between the first-ounce stamp price and automation letter rates, the fact that the class is used heavily by both household and business customers, and the policy importance of the nonstandard surcharge. Indeed, policy objectives are frequently highly important considerations in proposing First-Class rates.

As such, the ratemaking approach in First-Class Mail, for example, cannot be as mechanistic or formulaic as the example cited in the question might suggest. The number of rate elements, the relative revenue importance of those rate elements, the movement of mail pieces between single-piece and workshare in response to price changes, and other ratemaking considerations generally work to make the rate design process complex. These considerations are also likely to make it more difficult within First-Class Mail to precisely hit a cost coverage or contribution target, and to limit the usefulness of explicitly integrating a "target cost coverage" into the rate design workpapers themselves.

**Applying Revenue Adjustment Factors**

Base year revenues calculated using billing determinants, which are the distributions of volume to rate element, will not exactly match base year

revenues as reported in RPW.[4] The expectation is that this same discrepancy between calculated revenue and "actual" revenue would exist in the test year. Thus, the test year revenue estimate, derived by multiplying the rates by the test year volume associated with each rate element, needs to be adjusted up or down accordingly to reflect this base year relationship. Given the nature of First-Class ratemaking as discussed above, the practical point at which to apply a revenue correction factor, or revenue adjustment factor, is after the postage revenue by rate element has been calculated. For example, after single-piece revenues from first ounces, additional ounces, and the nonstandard surcharge have been calculated, the revenue adjustment factor is applied to arrive at the estimated TYAR revenue for the single-piece portion of the letters subclass. This is the revenue adjustment approach used in witness Fronk's workpaper (USPS-T-33 Workpaper, as revised April 17, 2000)[5], as well as in the rate design workpapers for other subclasses.[6]

[4] The discrepancies may be due to over- or underpayment of postage by some pieces, or perhaps the result of the mail mix in the billing determinants not exactly matching the mail mix which resulted in the RPW revenue.

[5] As the Commission is aware, revenue adjustment factors were not incorporated in witness Fronk's workpaper as originally filed (please see response to OCA/USPS-106(d) for an explanation). Incorporating these factors as discussed above and making the other revision described in the response to OCA/USPS-106(d) increased the estimated contribution from First-Class mail from $18.118 billion to 18.164 billion in the TYAR, which was not large enough within the FCM context to change his proposed rates or the rate design process described in his testimony.

[6] Presiding Officer's Information Request No. 1, Question 5 asked if the "RPW correction factor" should have been applied to the calculated after-rates revenues for Periodicals. The response filed to that question indicated that it was not necessary to use the RPW correction factor in the calculation of the TYAR revenues. A pending revised response to that question will indicate that the "revenue adjustment factor," or "RPW correction factor," should be used in the calculation of TYAR revenues. Because the RPW correction factors for Periodicals are so close to one, the resulting revenue would be minimally affected by this change.

It is also useful to put revenue adjustment factors in perspective within the overall rate design process. While the example in the question uses a factor of 1.2 as an illustration and presumably for arithmetic ease, in reality most revenue adjustment factors are very close to 1.00, rarely requiring more than a few percentage points of adjustment back to RPW revenue. In terms of First-Class Mail rate design considerations – and, indeed, for most other subclasses of mail as well -- the revenue correction factors are typically dwarfed in importance by other ratemaking considerations and policy objectives.

**Generic Description of the Postal Service's Rate Design Process**

As I mentioned in my responses to GCA/USPS-T32-8 and NAA/USPS-T32-3, the rate design process is an iterative one. As such, adjustments of several kinds take place between each pair of iterations. Some of the adjustments are necessary because the resultant revenue and volume do not allow for breakeven once the TYAR costs are estimated; some of the adjustments are necessary because the rate design witnesses discover that their expectations of revenue and/or volume do not, in fact, lead to the after-rates cost coverage targets; and some adjustments are necessary to correct known errors and discrepancies.

The rate design process begins with estimates of TYBR volumes. Those volumes are used in the rollforward model to develop TYBR costs. In order to assess the revenue shortfall to determine the revenue requirement in the test year, the estimated costs are compared to the estimated revenue. Each rate

design witness uses base year billing determinants, sometimes adjusted for additional rate elements not present in the base year, to distribute the TYBR volumes to rate elements in order to calculate TYBR revenue. At this stage, after distributing the TYBR volumes to rate element and applying the current (R97-1) rates, the rate witnesses would have applied the appropriate revenue adjustment factors. Although there is no official RPW version of the TYBR or TYAR revenue, the reasonable assumption is made that the discrepancies between the base year calculated revenues (developed from the base year billing determinants) and the actual base year RPW revenues would be the same discrepancies in percentage terms between the calculated TYBR revenues (using the base year billing determinants with the TYBR aggregate volumes) and the TYBR actual revenues.

In this rate case, I began – as noted in my responses to GCA/USPS-T32-8 and NAA/USPS-T32-3 – with TYBR volumes, revenues and costs, and developed approximations of the TYAR volumes, costs, revenues and cost coverages. I simulated the after-rates volume effects by using the own-price elasticities and cross-price elasticities as developed by witnesses Thress (USPS-T-7) and Musgrave (USPS-T-8), with the lags truncated so that only the test year effect on volume would accrue. I used these volume estimates in conjunction with TYBR costs and other costing information as I attempted to approximate the TYAR

effects before giving to each rate design witness my expectations of cost coverages[7] and percent rate increases by subclass.

Each rate design witness was given one or more TYAR cost coverage targets and the percent rate increases I expected to be associated with those cost coverages.[8] Each rate witness had available the own-price elasticities, and TYBR volumes, revenues and costs, and by using this information in conjunction with target cost coverages or markup factors, developed sets of rates which they expected would come close to the cost coverage targets and percentage increases I had provided to them.

As noted above, for various reasons, several iterations of this rate process were necessary. Each time the rate design witnesses produced a set of proposed rates, a TYAR volume forecast was produced. This volume forecast was then used by the rate design witnesses in conjunction with the billing determinants and revenue adjustment factors to develop TYAR revenue forecasts. The TYAR volume forecast was also used to develop cost forecasts. With each iteration, additional information was incorporated, known errors were corrected, and more knowledge was gained regarding the behavior of TYAR volumes and costs. This knowledge enabled the rate design witnesses to pinpoint the markup factors and other rate design adjustments necessary to more accurately attain their cost

[7] As noted elsewhere, including in my testimony at page 18, the cost coverages were calculated as the ratio of revenue to volume-variable cost but were set with consideration of the product specific costs such that the revenue for any subclass would more than adequately cover its product specific costs while also making an appropriate contribution to institutional costs.
[8] See also Tr.11/4491-93.

coverage targets and percentage increases. Many of my original cost coverage targets were revised somewhat in order to ensure that TYAR financial breakeven occurred, sometimes because my original approximations were not close enough, sometimes because the results were not acceptable to postal management, and sometimes to enable rate design witnesses to achieve smooth rate transitions.

## DECLARATION

I, Virginia J. Mayes, declare under penalty of perjury that the foregoing answers are true and correct, to the best of my knowledge, information, and belief.

Virginia J. Mayes

Dated: 5-24-00

## CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon all participants of record in this proceeding in accordance with section 12 of the Rules of Practice.

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